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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Edward J Sare

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EXAMINER

PARVINI, PEGAH

ART UNIT

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1793

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/518,792	Applicant(s) SARE ET AL.	
	Examiner PEGAH PARVINI	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 29, 36-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear whether the Applicants claim a particle size distribution wherein at least 40% by weight of the calcined kaolin has a particle size of at least about 1 μm or wherein at least 40% by weight of the calcined kaolin has a particle size of at least about 2 μm .

Claim Objections

Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 2, which is dependent on claim 1, recites the limitation of at least about 40% by weight of the

calcined kaolin has a particle size ranging from about 1 μm to about 10 μm ; whereas, claim 1 recites the limitation of at least about 40% by weight of the calcined kaolin has a particle size of at least about 2 μm .

Claim Rejections - 35 USC § 103

Claims 1-4, 6, 13-15, 26-27, 29-30, 34-35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 3,754,712 to Cecil.

Regarding claims 1, 13-15, 29-30 and 37, Cecil teaches a composition and method for its formation comprising an aqueous suspension or slurry of calcined kaolin clay having 70 percent solids suspension wherein slurry contains at least 35 percent by weight of particles coarser than 2 microns (column 2, lines 31-34, 42-46, 64-68; column 3, lines 34-36, 39-41). Cecil discloses that said clay is mixed with water and a small quantity of dispersant typically 0.01 to 0.1 percent based on the clay (column 2, lines 64-68; column 3, lines 37-39). Since the solids content is 70%, the amount of dispersant is calculated to be from 0.007 to 0.07 based on the slurry. In short, Cecil discloses forming a suspension of calcined clay in water which comprises dispersant (claim 1).

It is noted that the instant application claims that at least 40 % by weight of the particles have a particle size of at least about 2 μm ; thus, there is overlapping ranges of particle size disclosed in the reference with the one claimed in the instant application. Since overlapping ranges have been held to establish *prima facie* obviousness, it would

have been obvious to have selected from the overlapping portion of the range of particle size and the percentage of that particle size as that taught by Cecil to have reaches the invention as claimed. See MPEP § 2144.05.

Regarding claim 2-4, Cecil discloses that at least 35 percent by weight of the calcined kaolin clay has the particle size of coarser than 2 microns (column 2, lines 43-48; column 3, lines 50-54).

There is overlapping ranges of particle size between the disclosed particle size and the instantly claimed one, and overlapping particle sizes have been held to establish *prima facie* obviousness. See MPEP § 2144.05.

Regarding claim 6, Cecil teaches solids content of 70 percent (column 2, lines 65-68; column 3, lines 34-36, and 39-41).

Regarding claims 16-18, Cecil teaches the use of dispersants such as alkali metal condensed phosphate exemplified by tetra-potassium (or tetra-sodium) pyrophosphate (column 3, lines 28-35).

Regarding claims 26-27 and 34-35, Cecil disclose calcined kaolin clay slurry has a specific particle size distribution and solids content; Cecil, also, discloses the possibility of adding the slurry into a mill (for example, ball mill) to grind it (column 3, lines 63-66; column 4, lines 30-34).

Claims 23-25 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cecil as applied to claims 1 and 29 above, and further in view of US Patent No. 5,718,756 to Mohler.

Cecil teaches a calcined kaolin clay slurry having 70 percent solids content wherein at least 35% by weight of the particle have a size of greater than 2 microns.

Cecil does not expressly disclose the use of a pH modifier or pH adjuster in said slurry.

Mohler, drawn to paper coatings with good opacifying characteristics and good rheological properties, disclose that pH adjusting agents, such as sodium hydroxide, are among some of the conventional additives used in kaolin clay slurries (wherein the slurry is formed by mixing kaolin clay pigment particles, water, at least one of such conventional additives and some other components) to achieve a slurry pH of from about 5 to 10 (Abstract; column 3, lines 1-9, 34-46; column 4, lines 17-21, 37-46).

Therefore, it would have been obvious to one of ordinary skill in the art to modify Cecil in order to include the a pH modifying agent as that taught by Mohler motivated by the fact that such components are amongst some conventional additives used in producing kaolin clay slurries which are used in coating compositions.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cecil as applied to claim 1 above, and further in view of US Patent No. 3,309,214 to Joseph et al.

Cecil teaches a calcined kaolin clay slurry having 70 percent solids content wherein at least 35% by weight of the particle have a size of greater than 2 microns.

Cecil does not expressly disclose that said calcined kaolin clay comprises mullite.

Joseph et al. drawn to the use of calcined kaolin as pigments and filler, teach that if kaolin clay is subjected to shock calcining and prolonged heat treatment, the crystal structure and physical form of the kaolin is altered so that, in effect, a novel pigment is formed having a higher degree of whiteness and brightness power wherein as part of the modification of the crystal structure, gamma-Al₂O₃ and mullite crystals are formed within the said calcined kaolin (column 1, lines 11-19, 40-48, 58-61; column 3, lines 7-20, 25-28).

Thus, it would have been obvious to have obtained some mullite within calcined kaolin in the Cecil's invention motivated by the fact that Joseph et al. expressly disclose that calcination and heat treatment cause crystal structure modification to the kaolin crystals and change some of the crystals to mullite as detailed above.

Claims 7-12, 19-22, 31-32 and 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cecil in view of US Patent Application Publication No.

2003/0177952 to Cummings et al. and in further view of US Patent No. 4,716,186 to Portnoy et al. as evidenced by US Patent No. 3,801,332 to Cadmus.

Regarding claims 7-12 and 19-22, Cecil although disclosing a calcined kaolin clay slurry comprising calcined kaolin particles wherein at least 35% by weight of them are coarser than 2 microns and wherein the solids content is 70 percent, is drawn to an embodiment wherein no thickener is used except in the "Prior Art" section where Cecil discloses and/or implies that it is conventional to use such additives – thickeners and biocides (column 2, lines 1-19).

However, Cumming et al. disclose that some optional additives may be added to a paint coating composition of processed kaolin clay; such materials are, for example, thickeners such as montmorillonite, HEC (hydroxyethyl cellulose), CMC (carboxymethyl cellulose) in an amount of up to about 2% by weight, dispersants such as polyelectrolytes such as polyacrylates in an amount of up to about 2% by weight, and biocides such as metaborate in an amount of up to 1% by weight ([0010], [0070], [0073], [0075], [0085], and [0087]).

Cumming et al. disclose a wide range of thickeners some which do not undergo bacterial degeneration such as montmorillonite. Nevertheless, with reference to the disclosure of Cumming et al. regarding the use of cellulose derivative thickeners, such as HEC and CMC, Portnoy et al., drawn to starch derivatives and their use in latex paint, disclose that a particularly noteworthy feature or benefit of starch derivatives such as HEC in latex paint is its effect as a thickener which results in a paint composition that

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has notably improved flow/leveling characteristics and spatter resistance relative to that exhibited in comparable paint compositions (Cumming et al. [0073], [0082] – Portnoy et al., column 2, lines 51-58). Furthermore, Cumming et al., as noted above, disclose the use of biocides along with thickeners and other additives.

Thus, it would have been obvious to one of ordinary skill in the art to modify the slurry and composition of Cecil in order to use thickeners, even cellulose derivative thickeners such as CMC, and biocides in the calcined kaolin clay slurry as that taught by Cumming et al. motivated by the fact that not only they are conventional components used in calcined kaolin clay slurries, but also because, as detailed above, cellulose derivatives impart notable effect in paint composition with reference to flow and leveling characteristics and that any cellulose type degradation can be protected by the biocides as evidenced by Cadmus (column 4, lines 25-28). It is noted that Cadmus is used as an evidence of fact, and is further noted that Cummings et al. disclose the use of biocides in said slurries as well as detailed above.

Regarding claims 31-32, Cumming et al. disclose the use of thickeners as some of the optional additives to be added to the slurries of kaolin clay particulates used as pigment in coating compositions in an amount of up to 2% by weight, and the use of such is motivated by the fact that Portnoy et al. expressly disclose that a particularly noteworthy feature or benefit of starch derivatives such as HEC in latex paint is its effect as a thickener which results in a paint composition that has notably improved

flow/leveling characteristics and spatter resistance relative to that exhibited in comparable paint compositions, as detailed above.

Regarding claim 37, Cecil disclose the said kaolin slurry is used as pigment (claim 1), and it is well settled in the art that pigments are used in coating compositions such as paints. Moreover, Cumming et al. disclose the use of slurries of kaolin clay particulate

Regarding claim 38, Cumming et al. disclose a method of coating paper and other sheet material which comprises a means for applying the coating and a means for ensuring that correct level of coating composition is applied ([0088] to [0093]).

Response to Amendment

Applicants' amendment to claims 1, 29, and 36-38, filed February 4, 2008, pages 2-7, are acknowledged. However, said amendment does not place the application in condition for allowance.

Response to Arguments

Applicant's arguments, see pages 8-12, filed February 4, 2008, with respect to, specially, the rejection(s) of claim(s) 1, 6, 29, 36-37 under Title 35 U.S.C. 103(a) with reference to the point that Slepety's and Chen references do not disclose a particle size distribution wherein at least 40% by weight of the particles have the size of greater than

2 microns have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PEGAH PARVINI whose telephone number is (571)272-2639. The examiner can normally be reached on Monday to Friday 8:00am-4:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. P./
Examiner, Art Unit 1793

/Jerry A Lorengo/
Supervisory Patent Examiner, Art
Unit 1793